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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,137	04/20/2001	Vincent Delisle	10-336 US	9534

7590 07/08/2002

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EXAMINER

PAK, SUNG H

ART UNIT PAPER NUMBER

2874

DATE MAILED: 07/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/838,137

Applicant(s)

DELISLE ET AL.

Examiner

Sung H. Pak

Art Unit

2874

-- The MAILING DATE of this c mmunication appears on the c ver sheet with the corresp ndence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11-13, 15 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 7-10, 14, 16-18 and 22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

All the references submitted in the information disclosure statement have been considered by the examiner. Please refer to the PTO-1449 enclosed herein.

Drawings

The drawings are objected to because:

On page 2, line 8 the specification refers to "input plane 13" however, the "input plane 13" is not shown in the figures.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6, 11-13, 15, 19-21 are rejected under 35 U.S.C. 103(a) as being obvious over Delisle et al (US 5,905,824) in view of Haake (US 6,253,011 B1).

The applied reference, Delisle et al, has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned

by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Delisle et al discloses an optical device with all the limitations set forth in the claims, except it does not teach the use of tilting thermal actuator. Specifically, Delisle et al discloses: focusing lens (230); an input waveguides (206) for launching a signal into the integrated wavelength dispersive element (100); means for coupling the signal; and a thermal actuator for providing the movement to the coupling lens (212). The thermal actuator in this case is a simple thermal expansion element (column 5 lines 58-60).

Haake, on the other hand, discloses a bimorph thermally actuated leverage arm for aligning optical beams (Figs. 3A-3B), comprising of two opposite ends (free-end and attached-end, wherein the attached-end serves as the pivot point). It would have been advantageous to use the bimorph thermal actuator of Haake to actuate the lens because such bimorph actuator allows for greater displacement and actuation force as compared to simple thermal expansion material. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Delisle et al device to have bimorph thermal actuator of Haake.

Regarding claims 2-4, Delisle et al and Haake does not disclose the use of additional lens and anti-reflective coating, such elements are commonly used in the art. Additional lens and anti-reflective coatings provide efficient beam coupling with minimal amount of light loss during the coupling process. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use

additional lens and anti-reflective coating. It would have been desirable to minimize the light coupling loss.

Allowable Subject Matter

Claims 7-10, 14, 16-18, 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: an optical device comprising a supporting substrate, an input planar waveguide, output planar waveguide, an arrayed waveguide grating; and an input coupling structure having an input waveguide; lens for coupling the signal to the input waveguide; means for coupling the signal into the lens; thermally actuated tilt means for actuating the lens, is disclosed and taught by the prior art of record.

However, ***such optical waveguide grating device*** wherein the input waveguide is ***parallel to the input planar waveguide***, and the means for coupling the light signal further comprises a ***reflective element supported by the tilt means***, actuated by the thermally actuated element, has not been taught in any prior art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sunagawa (US 5,081,615) discloses an optical device that

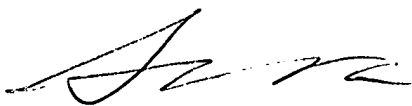
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corrects for a light exit angle when the temperature of the device substrate changes
(column 6 lines 52-58).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (703) 308-4880. The examiner can normally be reached on Monday - Thursday : 6:30am-5:00pm.


The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Sung H. Pak
Examiner
Art Unit 2874

sp
June 26, 2002



Rodney Bovernick
Supervisory Patent Examiner
Technology Center 2800